Power Transistor (−60V, −3A)

2SB1370

●**Features**

1) Low saturation voltage, typically $V_{CE(sat)}$ = −0.3V at I_C / I_B = −2A / −0.2A.
2) Excellent DC current gain characteristics.
3) Pc = 2W(Ta=25℃) / 30W(Tc=25℃)
4) Wide SOA (safe operating area).

●**Packaging specifications and h_{FE}**

Type	2SB1370
Package	TO-220FN
h_{FE}	EF
Code	—
Basic ordering unit (pieces)	500

●**Absolute maximum ratings (Ta=25℃)**

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−60	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−3	A(DC)
	I_{CP}	−6	A(Pulse) ✻
Collector power dissipation	P_C	2	W
		30	W(Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single pulse, Pw=100ms

●**Electrical characteristics (Ta=25℃)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−60	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E=−50 μA
Collector cutoff current	I_{CBO}	—	—	−10	μA	V_{CB}=−60V
Emitter cutoff current	I_{EBO}	—	—	−10	μA	V_{EB}=−4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5		I_C/I_B=−2A/−0.2A ✻
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5		I_C/I_B=−2A/−0.2A ✻
DC current transfer ratio	h_{FE}	100	—	320	—	V_{CE}/I_C=−5V/−0.5A
Transition frequency	f_T	—	15	—		V_{CE}=−5V, I_E=0.5A, f=5MHz ✻
Output capacitance	Cob	—	80	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

✻ Measured using pulse current.

(94L-411-B303)

Power Transistor (−60V, −3A)

2SB1655/2SB1565

●**Features**

1) Low saturation voltage, typically $V_{CE(sat)}$ = −0.3V at I_C / I_B = −2A / −0.2A.
2) Excellent DC current gain characteristics.
3) Wide SOA (safe operating area).

●**Packaging specifications and h_{FE}**

Type	2SB1655	2SB1565
Package	TO-220FN	TO-220FN
h_{FE}	E	EF
Code	—	—
Basic ordering unit (pieces)	500	500

●**Absolute maximum ratings (Ta=25℃)**

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EBO}	−7	V
Collector current	I_C	−3	A(DC)
	I_{CP}	−6	A(Pulse) ✻
Collector power dissipation	P_C	2	W
		25	W(Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single pulse, Pw=100ms

●**Electrical characteristics (Ta=25℃)**

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	−80	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage		BV_{CEO}	−60	—	—	V	I_C=−1mA
Emitter-base breakdown voltage		BV_{EBO}	−7	—	—	V	I_E=−50 μA
Collector cutoff current		I_{CBO}	—	—	−10	μA	V_{CB}=−60V
Emitter cutoff current		I_{EBO}	—	—	−10	μA	V_{EB}=−7V
Collector-emitter saturation voltage	2SB1655	$V_{CE(sat)}$	—	—	−1	V	I_C/I_B=−2A/−0.2A ✻
	2SB1565		—	—	−1.5	V	
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B=−2A/−0.2A ✻
DC current transfer ratio	2SB1655	h_{FE}	100	—	200	—	V_{CE}/I_C=−5V/−0.5A
	2SB1565		100	—	320	—	
Transition frequency		f_T	—	15	—	MHz	V_{CE}=−5V, I_E=0.5A, f=5MHz ✻
Output capacitance		Cob	—	50	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

✻ Measured using pulse current.

(94L-456-B349)